REMARKS

Claims 1-5, 7-15, and 17-19 are pending in the present application. Claims 10-14 are allowed; claims 6 and 16 are canceled; and claims 5, 7, 14, 15, and 17 are amended. Claims 5 and 15 are amended to include the features of claims 6 and 16, respectively. The remaining claims are amended to conform the claims to this amendment, or to correct minor typographical errors that do not affect the scope of these claims. Reconsideration of the claims is respectfully requested.

Amendments were made to the specification to correct errors and to clarify the specification. No new matter has been added by any of the amendments to the specification.

I. Objection to Specification

The examiner objects to the disclosure because of informalities in paragraphs 51 and 53, respectively. The disclosure has been amended accordingly.

II. 35 U.S.C. § 102, Anticipation

The examiner rejects claims 1, 5, 6, 15, 16, 18, and 19 under 35 U.S.C. § 102(b) as anticipated by *Evans*, Laterally Coupled Wave Guides, U.S. Patent Application Publication 2002/0126942 (September 12, 2002), now U.S. Patent 6,775,427 (hereinafter "*Evans*"). This rejection is respectfully traversed.

The examiner believes that:

> Regarding claim 1, Fig. 1 of Evans discloses "A surface emitting semiconductor laser system, comprising: a first cavity and a second cavity sharing an axis [z axis], the first and second cavities overlapping at an out-coupling aperture.

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A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the

reference broadly teaches. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983). In this case each and every feature of the presently claimed invention is not identically shown in the cited reference, arranged as they are in the claims.

Claim 1 is as follows:

> 1. A surface emitting semiconductor laser system, comprising:
> a first cavity and a second cavity sharing an axis, the first and second cavities overlapping at an outcoupling aperture.

Evans does not teach the feature of "a first cavity and a second cavity sharing an axis," as claimed. The examiner asserts otherwise, citing figure 1 of *Evans*, which is as follows:[1]

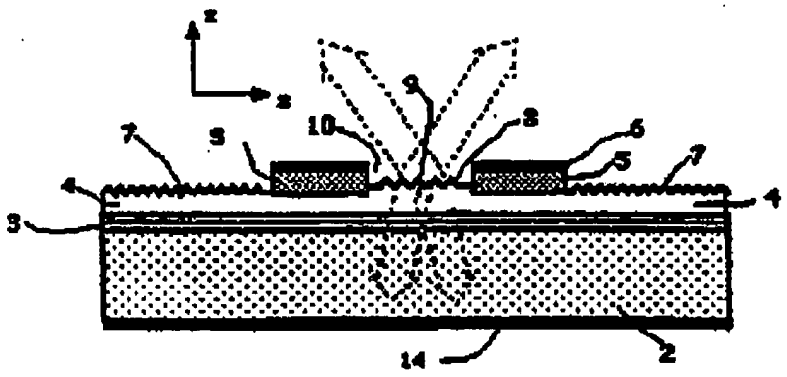

Figure 1A

Figure 1A of *Evans* shows a laser device having a single cavity along the Z axis, contrary to the examiner's assertions. This fact is shown by the description accompanying this figure:

> [0071] Gratings 7 are surface relief DBR gratings chosen to reflect light in the +/-z direction *to form the laser cavity*. (Note that these gratings can be buried structures within the device, and the term "surface relief" does not require the grating be on the surface of the device after processing.) The laser mode will be a standing wave which may be considered to be formed by two waves one flowing in the +z direction, the other in the -z direction. First order DBR gratings are preferred, but second or higher order gratings are also possible. The DBR grating depth and length and the thickness of layer 4 are chosen to provide the desired feedback as known in the art.

[1] The examiner cites to figure 1, though *Evans* shows a figure 1A and a figure 1B. Because figure 1A and figure 1B in *Evans* refer to the same object, Applicants only show the picture from figure 1A. However, the same analysis applies to both figures 1A and 1B.

Evans, paragraph 71 (emphasis supplied).

As the emphasized text shows, the distributed Bragg reflector gratings form *the* laser cavity; in other words, only one laser cavity is formed. This fact is not contradicted by the figure or subsequent text. For example, the text also provides that:

> [0073] The outcoupling grating 8 (sometimes referred to herein as OC grating, or OCG) is a surface relief grating with period chosen to couple light at desired angles from the grating plane. It is located at an aperture on the surface of the device. In a preferred embodiment, the outcoupling gratings are about 10 microns wide. The outcoupling grating may be shaped to control the shape of the emitted beam. The grating depth and thickness of the p-clad layer 9 in the vicinity of the grating 8 are chosen to provide the desired degree of outcoupling and to control beam shape. A window or aperture 10 in layers 5 and 6 is provided to allow unobstructed emission of light, and the size and shape of the outcoupling grating is matched to the mode of the fiber to which it couples light (in one embodiment). *Because of the two standing waves in the cavity and reflection from the grating*, the outcoupling grating simultaneously emits four different light beams, two above and two below the grating plane. These are depicted by dashed arrows. In the case of normal outcoupling of the laser light, the two top lobes are combined into a single beam, as are the two bottom lobes of emitted light.

Evans, paragraph 73 (emphasis supplied).

Again, *Evans* discusses what occurs in the single cavity. Because Figure 1 does not show a waveguide having "a first cavity and a second cavity sharing an axis," as claimed, Figure 1 of *Evans* does not teach all of the features of claim 1. In addition, while *Evans* does show devices having multiple cavities, none of the cavities share the same axis. Accordingly, *Evans* does not teach all of the features of claim 1. For this reason, *Evans* does not anticipate claim 1 at least for the reasons presented above.

Regarding claims 6 and 16, applicants have canceled these claims. Thus, the rejection with respect to these claims is moot.

Regarding claims 5, 15, 18, and 19, these claims contain or have been amended to contain the feature that at least two cavities share the same axis. As shown above, *Evans* does not teach this feature. Accordingly, *Evans* does not anticipate claims 5, 15, 18, and 19 for the reasons provided vis-à-vis the rejection of claim 1. Therefore, the rejection of claims 1, 5, 6, 15, 16, 18, and 19 under 35 U.S.C. § 102(b) has been overcome.

Furthermore, *Evans* does not teach, suggest, or give any incentive to make the needed changes to reach the presently claimed invention. Absent the examiner pointing out some teaching or incentive to implement *Evans* and the feature of multiple cavities lying along a single axis, one of ordinary skill in the art would not be led to modify *Evans* to reach the present invention when the reference is examined as a whole. Absent some teaching, suggestion, or incentive to modify *Evans* in this manner, the presently claimed invention can be reached only through an improper use of hindsight using Applicants' disclosure as a template to make the necessary changes to reach the claimed invention.

III. Objection to Claims

The examiner objects to claims 2-4, 7-9, and 17 as dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Because *Evans* does not anticipate the independent claims from which these claims depend, these claims should be in condition for allowance as presented in this response.

IV. Conclusion

It is respectfully urged that the subject application is patentable over *Evans* and is now in condition for allowance.

The examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

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